

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

**EP 1 162 122 A2**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:

**12.12.2001 Bulletin 2001/50**(51) Int Cl.7: **B62B 5/00**(21) Application number: **01303749.4**(22) Date of filing: **25.04.2001**

(84) Designated Contracting States:

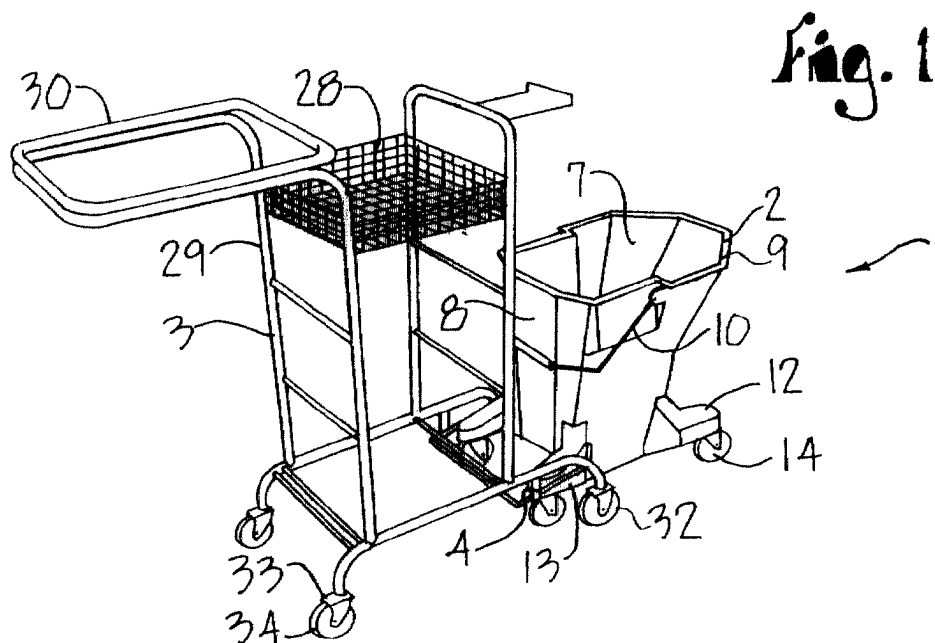
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE TR**

Designated Extension States:

**AL LT LV MK RO SI**(30) Priority: **05.06.2000 US 588778**(71) Applicant: **SCOT YOUNG RESEARCH LIMITED**  
**Stourbridge, West Midlands DY9 8HG (GB)**(72) Inventor: **Young, Scot****Toronto L0N 1G0 (CA)**(74) Representative: **Higgins, Michael Roger****A.R. Davies & Co.****27, Imperial Square****Cheltenham Glos. GL50 1RQ (GB)**(54) **Combination mop bucket and trolley**

(57) A combination mop bucket and trolley comprising an independent and detachable mop bucket 2 and a trolley 3 each having separate wheels 14, 32 for independent movement. The trolley has a front recess 36 to receive the mop bucket with the bucket remaining supported on the floor surface and without having to lift the mop bucket onto the trolley. A connection mechanism 4 extends between the trolley and the mop bucket to selectively attach the mop bucket to the trolley so that the combined trolley and bucket can be easily manoeuvred by one person.

ported on the floor surface and without having to lift the mop bucket onto the trolley. A connection mechanism 4 extends between the trolley and the mop bucket to selectively attach the mop bucket to the trolley so that the combined trolley and bucket can be easily manoeuvred by one person.

**EP 1 162 122 A2**

## Description

[0001] This invention relates to a combination mop bucket and trolley.

[0002] Maintenance workers often use mops and mop buckets for cleaning floors. The maintenance worker must also carry around with him or her an assortment of cleaning supplies including spray bottles, towel racks, rubbish containers or other cleaning items suited to the type of maintenance/cleaning to be performed. It is known to provide cleaning trolleys which have a platform onto which a mop bucket may be lifted and set down so that the mop bucket can be wheeled from room to room, as in a hotel/motel setting, or wheeled about a service area, as in a restaurant operation. The mop bucket can be heavy and particularly in the case of a person of small stature, may be beyond that person's capability to lift the mop bucket and set it on the platform of the trolley.

[0003] The present invention seeks to overcome these drawbacks.

[0004] According to the present invention there is provided a detachable trolley and mop bucket combination comprising a mop bucket having wheels thereon and movable over a floor surface and a trolley adapted for carrying cleaning supplies, the trolley having wheels thereon for moving over a floor surface, the trolley and the bucket being separately and independently movable and having a connection between them for selective attachment to securely connect the mop bucket to the trolley so that the combined trolley and bucket can be easily manoeuvred by one person.

[0005] Preferred and/or optional features of the invention are set forth in claims 2 to 5, inclusive.

[0006] The invention will now be more particularly described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of one embodiment of a combination mop bucket and trolley according to the present invention,

Figure 2 is an enlarged, fragmentary, perspective of the front of the trolley into which the mop bucket is positioned,

Figure 3 is an enlarged, fragmentary view showing a step of connection of the mop bucket to the trolley,

Figure 4 is a sequential view with Figure 3 showing connection of the mop bucket to the trolley,

Figure 5 is a perspective, fragmentary view of the mop bucket and trolley showing the same fully joined,

Figure 6 is a fragmentary, perspective view showing the manner of disconnection of the mop bucket from the trolley.

[0007] The reference numeral 1 of Figure 1 generally indicates a combination mop bucket and trolley embodying the present invention. The combination comprises a wheeled mop bucket 2 and a wheeled trolley 3 with a connection arrangement 4 extending therebetween for selectively attaching the mop bucket 2 to the trolley 3.

[0008] In greater detail, the mop bucket 2 comprises an open receptacle or bucket portion 7 with a rear straight wall 8 and a front pour spout 9. A handle 10 is provided for grasping the bucket. The bucket 2 has front and rear pairs of outrigger legs 12 and 13, respectively, which end in castor mounted wheels 14.

[0009] More details of the mop bucket are shown in Figures 3 and 4, in which a portion of the rear of the bucket 2 and the rear pair of outrigger legs 13 are shown in fragmentary view. The outrigger legs 13 are the ones that preferably engage with the trolley 3, because the pour spout 9 at the front of the mop bucket 2 may interfere with connecting the mop bucket 2 to the trolley 3 via the front of the mop bucket. The legs 13, as well as the front legs 12, extend outwardly from the body of the bucket portion 7 with the wheels 14 supported at the end of the legs. The legs 13 have a flat bottom 16 and inner and outer faces 18 and 19. Ends 20 of the legs are rounded. A vane 22 extends outwardly from the inner face 18 and serves as a stop for the connection means of the trolley as described below. Each of the pairs of the front legs and rear legs 12 and 13 are parallel to each other and include an angled face portion 24 extending outwardly from the bucket portion 7 and providing a face against which the trolley connection means is engaged. The tops 25 of the legs 12 and 13 are angled upwardly from their free ends.

[0010] The trolley 3 may be of various configurations and of various materials. In the illustrated example, it is formed of tubular steel members. However, it could be formed of plastics material, as plastic trolleys have become popular. The trolley 3 includes one or more shelves 28 which may be in the form of wire baskets and which are supported by upright members 29. A rear handle 30 is connected to rear upright members 29 and is for manipulation and pushing by a maintenance worker. The trolley 3 is supported on front and rear pairs of arms 32 and 33 supported by castored wheels 34. The rear pair of arms 33 support the trolley 3 at its rear with the front pair of arms 32 extending forwardly a sufficient distance to form a recess into which the mop bucket 2 can be received. The front arms 32 are spaced apart a sufficient distance also to receive the mop bucket 2 therebetween. In the illustrated example, the arms 32 are of tubular steel with an end radius downturn terminating in the castor wheels 34.

[0011] The connection arrangement 4 is supported within a recess 36 at the front end of the trolley 3 defined by the front pair of arms 32. In the illustrated example, the connection arrangement 4 is a mechanism including a generally U-shaped member 38 formed of bent steel rod. The U-shaped member 38 includes a central por-

tion 39 and spaced limbs 41 and 42 with inwardly angled end terminations 43 and 44. The U-shaped member 38 is pivotally suspended from hangers 46 and 47 extending downwardly from each of the arms 32 and is connected to the hangers by pivots 48. Stop arms 50 and 51 are connected to the bottom of the hangers 46 and 47 and each includes guide fingers 52 which form a slot 53 to receive the bucket leg ends 20. The U-shaped member 38 is biased towards a downward position by a return spring 55 extending between the central portion 39 and a cross-bar 57.

**[0012]** In use, the combination mop bucket and trolley 1 is connected together by positioning the mop bucket 2 into the recess 36 in the front of the trolley 3. The mop bucket 2 may be pushed into the recess 36 so that the legs 13 slide into the slots 53. At the same time as the leg ends 20 slide into the slots 53, the angled end terminations 43 and 44 of the limbs 41 and 42 slide upwardly on the angled top surface 25 of the legs 13 until reaching the angled sidewall 24, whereupon they snap downwardly under the urging force of the spring 55. The mop bucket 2 is now securely connected into the trolley 3 with forward movement or movement into the trolley stopped by the stop arms 50 and 51 and outward movement stopped by the bearing of the angled end terminations 43 and 44 on the angled sidewalls 24. To release the mop bucket 2 from the trolley 3, the U-shaped member 38 is pressed down, as by a foot on the central portion 39, to extend the return spring 55 and raise the angled end terminations 43 and 44 from engagement with the angled side walls 24, allowing the mop bucket 2 to be slid forwardly with respect to the trolley 3 and separated.

**[0013]** It will be apparent that the foregoing connection arrangement is a no tool connection, whereby there are no pins or bolts or other fasteners for the user to connect to attach/detach the mop bucket to the trolley. The user does not have to lift the mop bucket and place it upon a front carrier or shelf of the trolley, as was done with prior art devices. The bucket and the trolley are able to be rolled about the floor separately. Once joined, there is a rigid connection between them so that a single person can guide the trolley and bucket combination around sharp corners without concern about the bucket separating from the trolley and spilling.

**[0014]** The embodiment described above is given by way of example only and various modifications will be apparent to persons skilled in the art without departing from the scope of the invention as defined in the appended claims.

## Claims

1. A detachable trolley and mop bucket combination comprising a mop bucket (2) having wheels (14) thereon and movable over a floor surface and a trolley (3) adapted for carrying cleaning supplies, the

trolley having wheels (34) thereon for moving over a floor surface, the trolley and the bucket being separately and independently movable and having a connection (4) between them for selective attachment to securely connect the mop bucket to the trolley so that the combined trolley and bucket can be easily manoeuvred by one person.

2. The detachable trolley and bucket combination as claimed in Claim 1, wherein the trolley has spaced front legs (32) terminating in wheels (34) and forming a recess (36) therebetween with the mop bucket dimensioned to fit at least a portion of the mop bucket within the recess.

3. The detachable trolley and bucket combination as claimed in Claim 2, wherein the bucket is supported on front and rear pairs of outrigger legs (12, 13) with the wheels mounted at ends of the legs and wherein one pair of outrigger legs fit within the trolley recess.

4. The detachable trolley and bucket combination as claimed in Claim 3, wherein a connection mechanism (4) extends between the spaced front legs of the trolley.

5. The detachable trolley and bucket combination as claimed in Claim 4, wherein the connection mechanism comprises a pair of arms (41, 42) that engage the outrigger legs (13) of the bucket, the outrigger legs being angled and the engaging arms being shaped to match the angles of the outrigger legs, the engaging arms being biased to an engagement position by a spring (55) and having a portion (39) for contact with a person's foot so that a person may press downwardly upon the said portion and disengage the arms from connection with the outrigger legs in order to remove the bucket.

6. A detachable trolley and bucket combination comprising:

a) a mop bucket having front and rear pairs of outrigger legs (12, 13) terminating in wheels (14) for independent movement of the bucket over a floor surface; the outrigger legs having inwardly angled faces joining the bucket;

b) a utility trolley (3) adapted for carrying cleaning supplies and having a frame supported by front and rear legs (32, 33) terminating in wheels (34) for independent movement of the trolley over a floor surface, the front legs being spaced a distance for accommodating at least a portion of the mop bucket therebetween;

c) a connection arrangement (4) between the front of the trolley and the mop bucket and including engaging arms (41, 42) associated with the trolley front legs and configured to selec-

tively grasp one of the pairs of bucket outrigger legs, the engaging legs releasing the outrigger legs upon application of foot pressure, wherein the bucket may be selectively joined to the trolley and wheeled about as a unit.

5

10

15

20

25

30

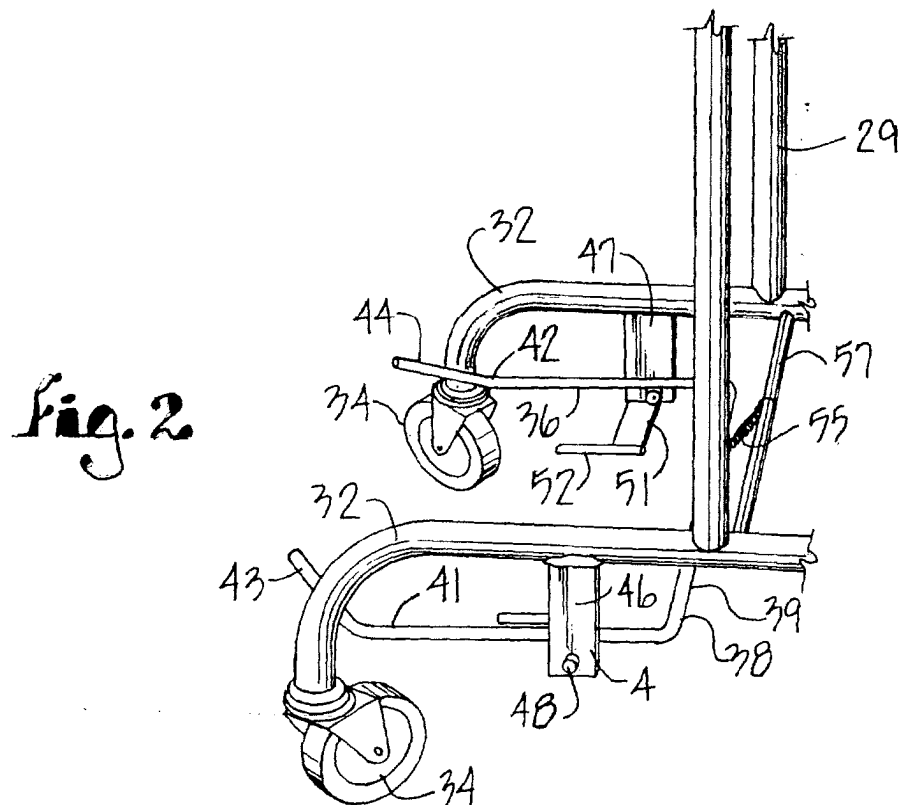
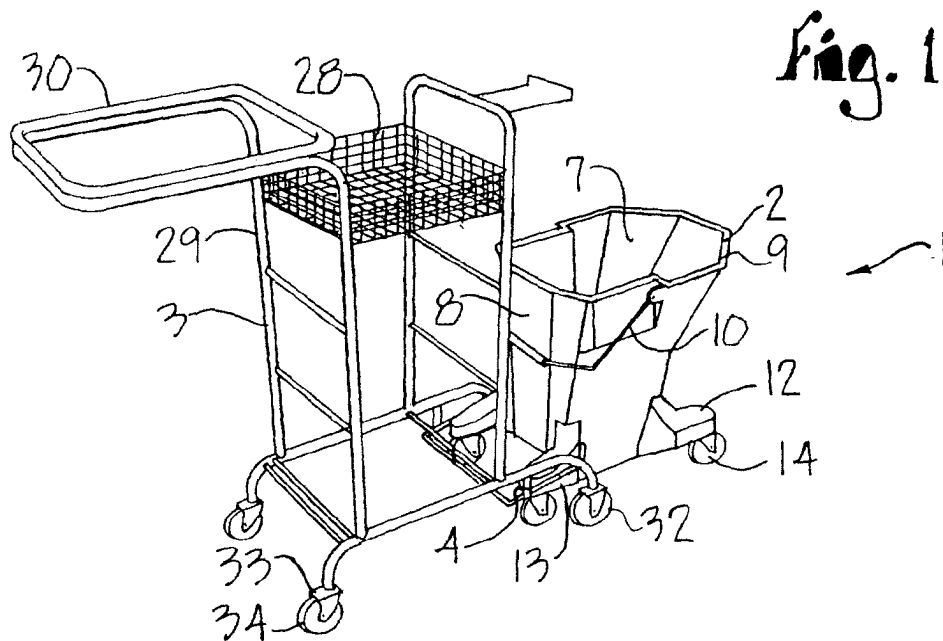
35

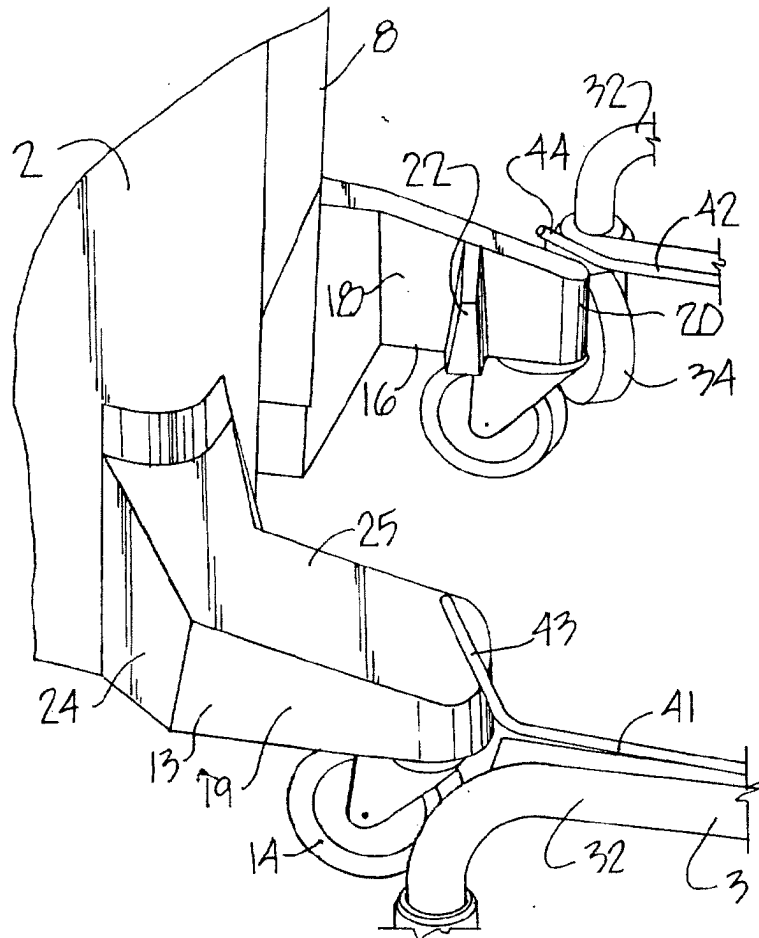
40

45

50

55





**Fig. 3**

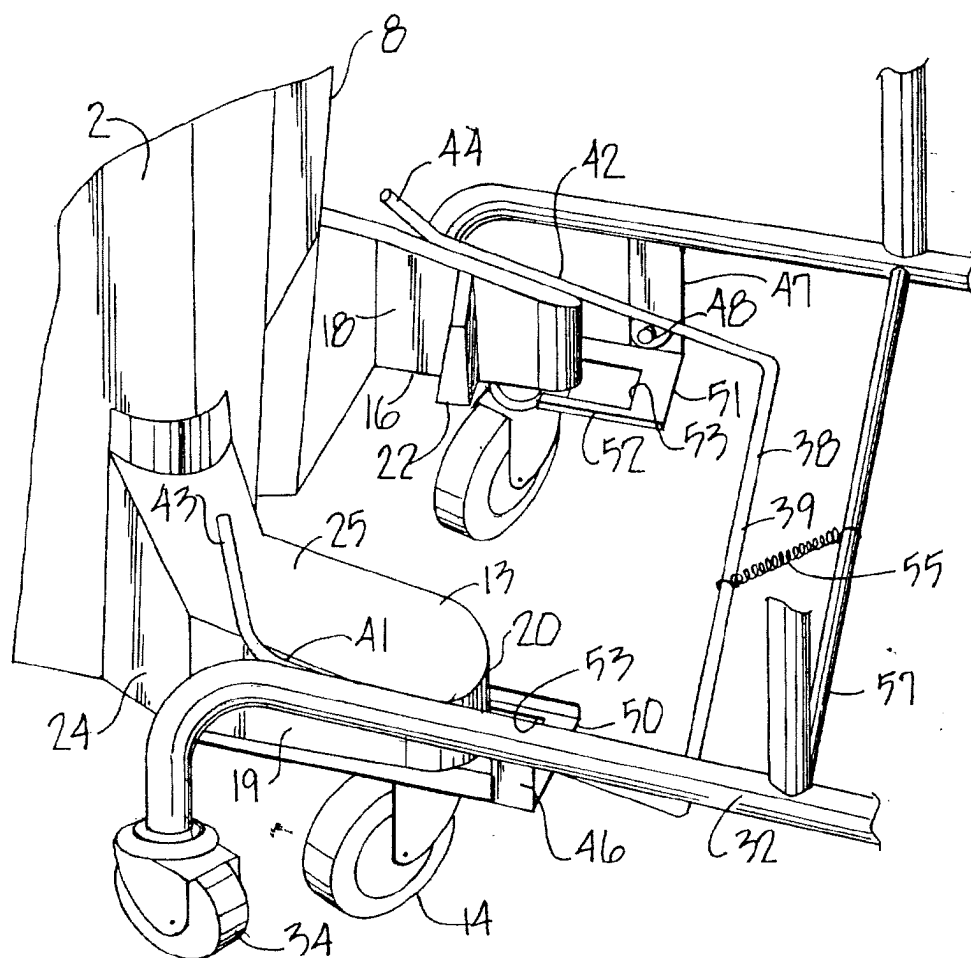
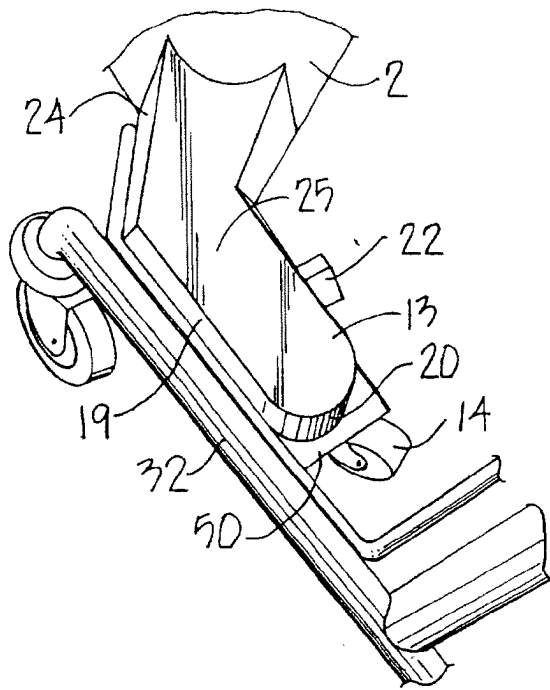
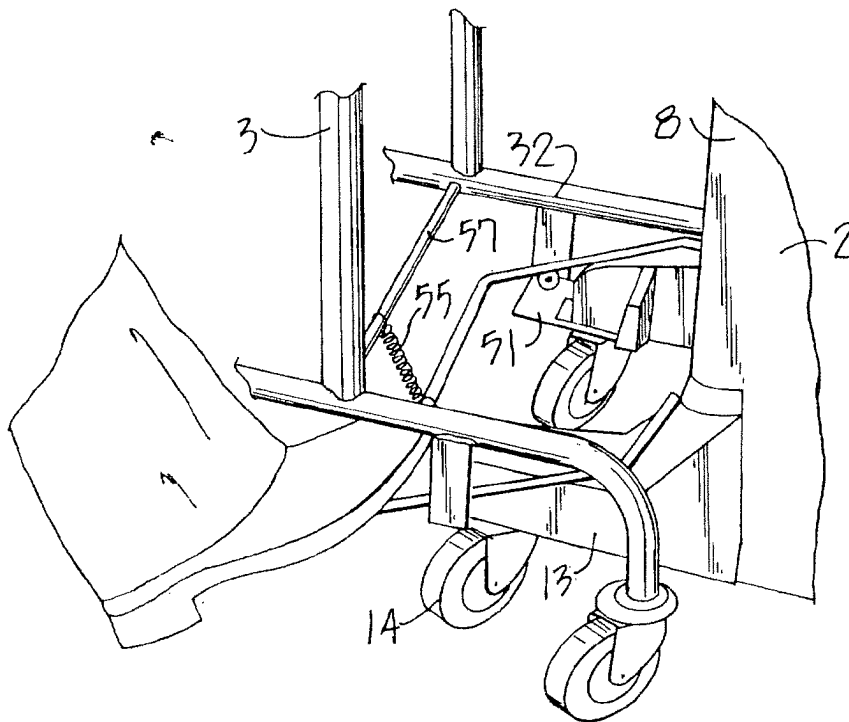


Fig. 4



*Fig. 5*



*Fig. 6*